



G-E-T High School Curriculum
Align, Explore, Empower
Scope and Sequence
Technology Education 2

Unit 0 - (Safety, Work Ethic, Employability Skills)

(Ongoing)

- Throughout this course students are focusing on how to use equipment correctly and safely. While this is going on they are continually developing work ethic and employability skills. These skill sets are learned by completing large projects in the wood shop. While in the woodshop students are learning how to work with a variety of tools/machines, work in small/large groups, keep on task while working in a shop setting, stay with deadlines, complete missed time by working outside of class meeting hours etc.

In this unit, students will ...

- Safely and correctly use the wood shop and common tools in a woodworking shop to complete multiple projects
- Develop work ethic skills and employability skills through project based learning and managing time to complete projects

Standards for (Technology Education 2)

- LE1.a.11.h Exhibit skills such as innovation, intuition, adaptation, life-long learning and coach-ability to develop leadership potential over time.
- LE1.b.7.h Capitalize on team members' individual talents and skills in a project.
- LE1.b.8.h Apply conflict management skills to help facilitate solutions

Unit 1 - (Identify lumber warpage and wood identification)

(2-3 days)

- Students will learn about wood as a building material, different species of wood, lumber warpages and pros and cons of wood as a building material.

In this unit, students will ...

- Identify parts of the tree and the importance of wood as a building material
- Identify lumber warpages consisting of cup, bow, crook and twist
- Identify Oak, Maple, Ash, Pine, and Cherry lumber

Standards for (Technology Education 2)

- BB1.b.5.h Select appropriate resources and explain how trade-offs between competing values, such as availability, cost, desirability and waste influenced their decision

Unit 2 - (Identify and develop blueprints for various projects)

(2-3 days)

- Students will learn about how to create a product from beginning thoughts to the end product. Through this process students will go through the various steps to design a project.

In this unit, students will ...

- Students will identify and implement steps in planning a product. (Identify problem, sketch product, determine resources, determine tool/equipment, prepare working drawing, build, test/complete feedback)

Standards for (Technology Education 2)

- ENG3.a.5.h Explain technological problems must be researched before they can be solved
- ENG4.a.5.h Identify the design problem to solve and determine how to address it

Unit 3 - (Identify and demonstrate proper safety usage of common woodworking tools.)

(1 week)

- Students will learn about various hand and power tools commonly used in the woodworking shop. They will identify parts, complete safety tests and safety demonstrations to accurately and safely use the tools/machines.

In this unit, students will ...

- Students will identify and demonstrate proper usage of table saw, jointer, planer, sliding compound miter, shaper, finish nailer, drill, and other hand/power tools.
- Students will identify and apply proper safety in the shop setting. (safety glasses, guards in place, proper positioning)
- Students will demonstrate proper shop etiquette toward all persons and equipment in the shop setting

Standards for (Technology Education 2)

- AC1.c.5.h Demonstrate and use the common hand tools of the trade safely and properly.
- AC1.f.6.h Demonstrate the safety procedures and practices in various work environment settings pertaining to residential and commercial construction

Unit 4 - (Implement and use ruler measurement to 1/16" precision, add & subtract fractions to 1/16"
(2-3 days/ongoing)

- Students will work on various measurement exercises from worksheets to examples on various materials. Measurement is worked on throughout this course as students are building projects.

In this unit, students will ...

- Apply and use the ruler to 1/16"
- Add and subtract fractions to 1/16"

Standards for (Technology Education 2)

- AC1.b.14.h: Apply conventional construction measurement processes accurately

Unit 5 - (Identify and apply 3D modeling software)

(4-5 weeks)

- Students will use Autodesk Inventor to create a blueprint for a woodworking project (coffee table, night stand, entry table). They will also use Inventor to design a product to be machined on a CNC mill or CNC lathe. This is typically completed as a partnership with Fastenal where the one product out of the entire class is voted on and then machined at Fastenal. The class then goes to tour the facility and each student receives the product.

In this unit, students will ...

- Students will identify and apply navigating the software/tools on Inventor (part, assembly, working drawing files and line, rectangle, circle, dimension, extrude tools etc.)

Standards for (Technology Education 2)

- ENG1.a.9.h: Examine how the design needs to continually be evaluated and the ideas of the design must be redefined and improved
- ENG2.b.4.h: A prototype is a working model used to test a design concept by making actual observations and necessary adjustments
- ENG3.b.5.h: Explain technological problems must be researched before they can be solved
- ENG4.a.5.h: Identify the design problem to solve and determine how to address it

Unit 6 - (Produce finish quality stock from rough sawn lumber through a woods project (coffee table, night stand, bookshelf, entry table)

(6-8 weeks)

- Students will use the blueprint they created of their desired project (coffee table, night stand, bookshelf, entry table) to build the project in the wood shop. They will be using a variety of woodworking tools and will work independently and in small groups to complete the project. There will be focus on safety, working efficiently, working with partners, maintenance and clean up.

In this unit, students will ...

- Students will use jointer, planer, table saw, sliding compound miter saw, to prepare stock from rough sawn lumber to finished product
- Student will identify and produce the following joints edge, rabbet, dado, pocket, dowel, dovetail, half-lap, mortise and tenon and tongue and groove

Standards for (Technology Education 2)

- BB1.e.5.h: Select and perform an appropriate maintenance is the process in order for the product or system to continue functioning properly, to extend its life or to upgrade its capability given a flawed product or system
- MNF1.a.9h: Select and apply the appropriate units and scales for situations involving measurement
- MNF1.e.8.h: Use a manufacturing system to produce a product.
- MNF1.f.8.h: Recognize technologies provide a means for humans to alter or modify materials and to produce products